

DOCTOR BETSY JACKSON'S JOURNAL

My name is Dr. Betsy Jackson and I am a field researcher at the Charles Darwin Research Station in the Galápagos Islands. I have been doing research on the Galápagos giant tortoise, *Geochelone elephantopus*, for six months and plan to continue my work for at least two more years. I am trying to establish a detailed database of the ecological role of the tortoise on Española Island. Española is a small island that is located in the southern part of the Galápagos Archipelago. I have been taking extensive field notes as I observe the habits and the habitats of this magnificent animal.

Here are a few of the observations I have made.

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Española Island: The giant tortoises have been spotted at last. These tortoises are of the saddleback variety, that is, they have an arched opening in their carapace (shell). The large neck opening allows them to reach the tall cactus pads of the tree-like prickly-pear cactus. In addition to eating the cactus pads, they also eat the pear fruit of the cactus. This behavior of eating the cactus pear is not only good for the tortoise, it is also good for the cactus itself. The seeds of the cactus are protected by a very thick coating and they can only sprout into new plants if they have been eaten, digested, and eliminated by an animal, so the seed coat is worn off. Both organisms benefit from this relationship. This is very similar to the seeds of the Galápagos tomato, which is also eaten by the tortoise.

As I observe the tortoises in the field I notice that the ground finches that are found all over the island have been interacting with the tortoises in a very interesting way. Quite frequently I see a ground finch land on the giant tortoise and pick at the small bugs that are bothering it. The finch picks what looks like a mite or a tick from the tortoise and eats it. This way the finch gets some food and the tortoise is cleaned of the small parasites that seem to bother many island animals.

The tortoises are not very wary of the other animals around them, including me! I can get extremely close to them without them being afraid. My background research on these tortoises indicates that this lack of fear is part of the reason their current population numbers are so low. The population was estimated to be more than 250,000 individual tortoises before whalers, pirates, and even explorers captured thousands of them for food. Because the tortoise can go for long periods without water, sailors would take many animals and stack them in the holds of their ships so they could have fresh food for months. The current population of tortoises on the islands is only 15,000- 20,000, but the numbers are improving.

But humans killing the tortoises is not the only reason their numbers decreased. As humans came to the islands, they also brought with them dogs, goats, and pigs for food, and rats came ashore from their ships. The pigs and rats eat tortoise eggs, and dogs will prey upon young turtles that can't move fast enough to run away. Goats do not eat the tortoises themselves, but they eat huge quantities of the lush vegetation that the tortoises need so desperately to survive.

I have heard that the native Galápagos Hawk preys on the young tortoises too, but I have not observed this behavior since I have been doing my field research. In June I saw a young hawk perch on a large male tortoise to watch the fields for small lava lizards. The hawk was taking advantage of the large perch, but the tortoise was not even aware of it. The best part of my research is knowing that I will be helping the population of the tortoises increase in number. The scientists at the Charles Darwin Research Station have been helping the Galápagos tortoise by collecting unhatched eggs and hatching them in captivity so no other animals can eat them. After raising the young tortoises for two to three years, they are replaced on the same island that the eggs came from. The tortoises benefit from this relationship, even though the scientists don't gain anything directly.